

LOL-HECO-IR-86

Ref: T-9 & Net Present Value (NPV) can be used to measure costs over time.

Question(s):

- a. Does HECO use NPV for (1) construction of new generators; (2) construction of electric lines and substations; (3) estimated fuel costs?
- b. Does HECO uses NPV for construction and not fuel?
- c. Can a real comparison be made between central generation/transmission lines and renewable energy/distributed energy [if?] is the NPV of fuels is not used?
- d. Changes assumptions by small amounts, such as the price of oil will be between \$20-26/barrel from 2000 to 2020, can have major implications, and can change the optimal solution. How has HECO analyzed the risk of a sharp rise in the price of oil.
- e. How has HECO evaluated at what oil price or oil volatility level does the optimal solution stop being optimal?

HECO Response:

- a. The net present value (NPV) of annual revenue requirements for a study period is one of many perspectives used in evaluating the economics of various options. When HECO evaluates utility options (i.e. construction of new generators; construction of electric transmission lines; and other capital, O&M, and fuel expenditures) the annual revenue requirements of each option is calculated in order to evaluate the potential impact to ratepayers. The NPV of the annual revenue requirements is one method to compare options that have different expenditure patterns.
- b. Please refer to response subpart a.
- c. In order to make an economic comparison between central generation/transmission lines and renewable energy/distributed energy, all costs involved in each option must be considered, such as capital cost, O&M expense, fuel expense, removal cost, new cycle cost, transmission losses, etc.

- d. Fuel costs, or changes in fuel costs, were not included in the three transmission system alternatives that are discussed in HECO T-9 and HECO-901. Please note that the draft Environmental Assessment for the East Oahu Transmission Project, 46kV Phased Project, discusses other alternatives considered and eliminated from further analysis by HECO, including non-transmission alternatives.
- e. Please refer to the response to subpart d.